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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,205	04/02/2004	Karelle L. Cornwell	STL919960054US2/1737CIP	2205

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EXAMINER

LIN, SHEW FEN

ART UNIT	PAPER NUMBER
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/817,205	Applicant(s) CORNWELL ET AL.	
	Examiner SHEW-FEN LIN	Art Unit 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9-18, 21-28 and 31-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-18, 21-28, and 31-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- a. This action is taken to response to Request for Continued Examination filed on 11/28/2007.
- b. Claims 1-6, 9-18, 21-28, and 31-33 are pending in this Office Action. Claims 1, 12, and 23 are independent claims.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 28, 2007 has been entered.

Terminal Disclaimer

The terminal disclaimer filed on 4/20/2007 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of Patent 6,754,656 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Objection -- Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 23 recites the limitation of “a machine readable medium;” however, the specification of the disclosure is completely silent on the subject matter of “machine readable medium.” It does not even cite the term “machine readable medium,” let alone providing explanations regarding what constitutes “a machine readable medium.”

Claim Rejections – 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 12-18, 21-28, and 31-33 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 12 recites the use of various components and elements that would be reasonably understood by one of ordinary skill in the art to mean software, software based component implementation, or an abstract concept based on software. Examples of components and concepts used in the claim are: "a database management system implemented in a digital computer", "a database system component", "a data manager", and other such terms that are interpreted to mean abstract concepts and software implementations. There are no definitive hardware or physical components associated with these examples in the claims or in the specification.

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Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed Cir. 1994).

Merely claiming nonfunctional descriptive material, i.e., abstract ideas stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.”).

Regarding claims 13-18 and 21-22 depend from rejected claim 12, comprise the same deficiencies as those claims directly or indirectly by dependence, and are therefore rejected on the same basis.

Claim 23 recites “A computer readable medium encoded with a computer program...”. However, the specification of the application does not explicitly define what constitutes “a computer readable medium or media.” A “computer readable medium” can be any means that can contain, store, communicate, propagate, or transport the program for used by or in connection with the instruction execution system, apparatus, or device. As indicated in the MPEP §2106, Signal or wave does not appear to be a “process, machine, manufacture, or composition of matter”, *In re Nuijten*, Docket no. 2006-1371, Fed. Cir. Sept. 20, 2007, “computer readable medium or media” should only include those medium or media that are statutory subject matter.

Regarding claims 24-28 and 31-33 depend from rejected claim 23, comprise the same deficiencies as those claims directly or indirectly by dependence, and are therefore rejected on the same basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-6, 9-18, 21-28, and 31-33 are rejected under 35 U.S.C. 102(a) as being anticipated by “Locking in DB2 for MVS/ESA Environment”, August 1996, International Technical Support Organization, San Jose Center, hereinafter “LockDB”.

As to claim 1, LockDB discloses a method for controlling concurrency of access to data in a database system (proper locking for processes concurrency, page 1), the method comprising:

partitioning a table in the database system into a plurality of partitions (pages 44, 48-49, 65-66);

receiving a lock request for access to data in the database system (pages 3-5, U-lock or S-lock), the lock request being a request for a page lock or a row lock for a corresponding row or page in the database system containing the data (the Share, Update, and Exclusive lock modes in the table apply to row or page locks, page 2);

identifying a partition of the plurality of partitions that contains the row or the page in the database system containing the data (identify partition based on lock hierarchy, pages 11, 65-66);

associating the lock request with a partition lock on the partition that contains the row or the page in the database system containing the data (lock partition, pages 11, 48-50) , the

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partition lock locking the partition at a lock state that permits serialized access to data in the partition (locking for serialization, pages 9-11, 50, 66); and

serially accessing the data in the partition using the partition lock (X-latch is used to serialize access with S-latches and other X-latches for the update process, pages 50, 58, 56, 116).

As to claim 2, LockDB discloses further comprising: responsive to the data being committed at a time of receiving the lock request, accessing the data without using the partition lock (lock avoidance is a mechanism used under certain circumstances by DB2 to increase concurrency, at the same time avoiding calls to IRLM to request a page or row lock, pages 22-28).

As to claim 3, LockDB discloses the method of claim 1, wherein the lock state protects against interference in the form of updates to the partition (only the lock owner can read or change the locked data, pages 1-2)

As to claim 4, LockDB discloses the method of claim 3, wherein serially accessing the data in the partition includes permitting lock requests access to the partition that are compatible with the lock state (page 2).

As to claim 5, LockDB discloses the method of claim 1, wherein serially accessing the data using the partition lock comprises an application accessing the data through a single database system (pages 17, 28-29, 32, 48-49).

As to claim 6, LockDB discloses the method of claim 1, wherein serially accessing the data using the partition lock comprises a second database system in a data-sharing environment accessing the data (shared databases, pages 159-160).

As to claim 9, LockDB discloses the method of claim 1, wherein the lock request is a request for a shared lock (pages 2, 17).

As to claim 10, LockDB discloses the method of claim 1, wherein the lock request is a request for an exclusive lock (pages 2, 17).

As to claim 11, LockDB discloses the method of claim 4, further comprising:
receiving a lockmax value (LOCKMAX, it defines the maximum number of page or row locks an application process can hold simultaneously in the table space, pages 19-20),;
accumulating for an application, a number of lock requests for access to the data in the database system by the application (pages 19-20);
comparing the number of lock requests with the lockmax value (pages 19-20); and
when the number of lock requests equals the lockmax value, escalating the lock state (if a program requests more than that number, locks are escalated, pages 19-20)

As to claims 12-18, are directed to a computer system carrying instructions for performing the methods of claims 1-6, 11 and are rejected along the same rationale.

As to claims 21-22, are directed to a computer system carrying instructions for performing the methods of claims 9-10 and are rejected along the same rationale.

As to claims 23-28, 33, are directed to a computer readable medium carrying instructions for performing the methods of claim 1-6, 11 and are rejected along the same rationale.

As to claims 31-32, are directed to a computer readable medium carrying instructions for performing the methods of claims 9-10 and are rejected along the same rationale.

Response to Amendment and Remarks

Applicant's arguments with respect to claims 1, 12, and 23 have been fully and carefully considered but are moot in view of the new ground(s) of rejection. Please refer to the corresponding sections of the claim analysis for details.

Related Prior Arts

The following list of prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Annevelink; Jurgen, US 5448727 A, "Domain based partitioning and reclustering of relations in object-oriented relational database management systems".
- Devarakonda; Murthy et al., US 5454108 A, "Distributed lock manager using a passive, state-full control-server".
- Lomet; David B., US 5596754 A, "Method for performing private lock management".

- Kodavalla; Hanuma et al., US 5717919 A, " Database system with methods for appending data records by partitioning an object into multiple page chains".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shew-Fen Lin whose telephone number is 571-272-2672. The examiner can normally be reached on 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

March 1, 2008

Shew-Fen Lin /S. L./
Examiner, Art Unit 2166

/Hosain T Alam/
Supervisory Patent Examiner, Art Unit 2166